

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 1670	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/IL03/00066	International filing date (day/month/year) 27 January 2003 (27.01.2003)	(Earliest) Priority Date (day/month/year) 30 January 2002 (30.01.2002)
Applicant EREL, DAVID		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1A



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures

Form PCT/ISA/210 (first sheet) (July 1998)

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL03/00066

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-8, 12-15, 22, 24, 26, 28-31 and 33-46

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL03/00066

A. CLASSIFICATION OF SUBJECT MATTERIPC(7) : H05K 7/20
US CL : 165/80.3, 121, 122, 185; 174/16.3; 257/722; 361/697, 704

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
U.S. : 165/80.3, 121, 122, 185; 174/16.3; 257/722; 361/697, 704

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,365,400 A (ASHIWAKE et al) 15 November 1994 (15.11.1994), see Figures 1-5 and 12.	1-3, 13-14, 22, 24, 28-29, 35-42, 44, 46 4-8, 12, 15, 26, 30-31, 33-34, 43, 45
X --- Y	US 5,502,619 A (WANG) 26 March 1996 (26.03.1996) see Figure 1.	1-3, 5, 13-14, 22, 24, 28-31, 35-42, 44, 46
X --- Y	US 5,535,816 A (ISHIDA) 16 July 1996 (16.07.1996), see Figures 1-4 and 12.	4, 6-8, 15, 26, 33-34, 43 1-3, 13-14, 22, 24, 26, 28-29, 35-42, 44, 46 4-8, 15, 30-31, 33-34, 43, 45

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "B" earlier application or patent published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "X" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "Z" document member of the same patent family

Date of the actual completion of the international search

20 November 2003 (20.11.2003)

Date of mailing of the international search report

06 FEB 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703)303-3230

Authorized officer

Leonard R. Leo

Telephone No. 703-303-0861

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

PCT/IL03/00066

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,567,986 A (ISHIDA) 22 October 1996 (22.10.1996), see Figures 4-5 and 11.	1-3,13,22,24,28- 29,35-42,44,46 ----- 4-8,15,26,30-31,33- 34,43,45
X --- Y	US 5,583,746 A (WANG) 10 December 1996 (10.12.1996), see all figures.	1-3,5,13-14,22,24, 28-31,35-42,44-46 ----- 4,6-8,15,26,33-34,43
X --- Y	US 5,896,917 A (LEMONT et al) 27 April 1999 (27.04.1999), see Figures 15-16 and 19-21.	1-4,13- 14,22,24,26,28-31,35- 42,44-46 ----- 5-8,15,33-34,43
X --- Y	US 5,960,863 A (HUA) 05 October 1999 (05.10.1999), see Figures 3 and 7.	1-3,13-14,22,24,28- 31,35-42,44-46 ----- 4-8,15,26,33-34,43
X --- Y	US 6,125,920 A (HERBERT) 03 October 2000 (03.10.2000), see Figures 3 and 7-8.	1-3,5,13-14,22,24,28- 31,35-42,44-46 ----- 4,6-8,15,26,33-34,43
X --- Y	US 5,526,875 A (LIN) 18 June 1996 (18.06.1996), see Figures 1-7.	1-2,13-15,22,24,28- 31,35-42,44-46 ----- 3-4,26,43
Y	US 6,244,331 B1 (BUDELMAN) 12 June 2001 (12.06.2001), see Figures 4-5B.	33-34
Y	US 6,104,607 A (BEHL) 15 August 2000 (15.08.2000), see Figure 3, element 44.	43

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains claims directed to more than one species of the generic invention. Those species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:

- I. Figures 1A-I
- II. Figure 2A
- III. Figures 3B-G
- IV. Figures 5A-J
- V. Figures 6A-C
- VI. Figures 11A-B

The claims are deemed to correspond to the species listed above in the following manner:

- I. Claims 3-8, 13-15, 22, 24, 26, 33-34, 41, 43
- II. Claims 3, 11, 13-15, 26, 32-34, 41, 43
- III. Claims 3-4, 9-10, 13-15, 26, 33-34, 41, 43
- IV. Claims 3, 16-17, 21
- V. Claims 18-21, 25, 27
- VI. Claims 3, 11, 41

If applicant believes more species exist, the applicant should list the figures and claims associated therewith.

The following claim(s) are believed to be generic: 1-2, 12, 28-31, 35-40, 42 and 44-46.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: the species are mutually exclusive and are separately the special technical features. The subject matter of the generic claims are not special technical features.

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.